Terrestrial magnetism and atmospheric electricity. Baltimore. v. 27. September, 1922.

Marsden, E. Some experiments on the penetrating radiation present in the atmosphere. p. 101–104.

Wisconsin State cranberry growers' association. 35th annual meeting. Wisconsin Rapids, Wis. Jan. 10, 1922.

Malde, O. G. Local forecasting of his own cranberry bog very important for the Wisconsin cranberry grower. p. 25–29.

MEASUREMENTS OF THE SOLAR CONSTANT OF RADIATION AT CALAMA, CHILE.

NOTE.—Data for the above not having been received in time from South America will appear in a later issue.—*Editor.*

SOLAR OBSERVATIONS.

SOLAR AND SKY RADIATION MEASUREMENTS DURING NOVEMBER, 1922.

HERBERT H. KIMBALL, in Charge Solar Radiation Observations.

For a description of instruments and exposures and an account of the method of obtaining and reducing the measurements, the reader is referred to this REVIEW for April, 1920, 48:225.

From Table 1 it is seen that direct solar radiation intensities averaged very close to normal values for November at all three stations.

Table 2 shows that the total solar and sky radiation received on a horizontal surface averaged close to the November normal at Washington and Lincoln, and considerably below the normal at Madison, the deficiency being due to unusual cloudiness.

Skylight-polarization measurements made on six days at Washington give a mean of 58 per cent, with a maximum of 68 per cent on the 17th. At Madison measurements made on the morning and afternoon of the 16th give a mean of 71 per cent. These are average polarization values for November at the respective stations.

NOTE.—Continuous registration of the total solar and sky radiation received on a horizontal surface, which was interrupted at Lincoln, Nebr., on June 2, 1921, on account of a defect in the Callendar receiver, was resumed on November 7, 1922, the defective receiver having been replaced by one that had been in use at Washington.

Beginning with November 1, the record of the total solar and sky radiation at Washington has been obtained by means of a thermopile of 50 gold-palladium, platinum-rhodium junctions in series, connected alternately to white and black metal rings, exposed horizontally under a hemispherical glass cover. The registration is by means of an Engelhard recording voltmeter, and the standardization has been effected by comparing the thermopile record with readings of the Marvin and the Smithsonian pyrheliometers. A description of the thermopile will be given at a later date.

TABLE 1.—*Solar radiation intensities during November, 1922.*

[Gram-calories per minute per square centimeter of normal surface.]

Date.	Sun's zenith distance.										
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon.
	75th meridian time.	Air mass.									Local mean solar time.
		A. M.					P. M.				
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Washington, D. C.											
November 1	4.75	.....	0.90	1.03	1.20	1.40	1.10	0.73	0.64	0.55	5.79
8	6.50	0.73	0.80	1.01	1.17	1.35	.....	.....	0.97	0.89	3.30
9	4.95	0.71	0.92	1.06	1.23	.....	.....	.....	.....	.....	4.75
10	4.57	0.87	0.92	1.04	1.25	.....	1.19	0.89	0.60	.....	4.17
17	4.17	0.69	0.83	0.99	1.16	1.41	1.16	.....	.....	.....	4.17
20	5.56	0.80	0.93	1.13	1.28	.....	.....	.....	.....	.....	4.57
23	3.30	.....	0.82	1.00	1.21	1.47	.....	0.96	0.84	0.71	3.45
24	2.87	0.80	0.91	0.96	1.26	.....	.....	.....	.....	.....	2.49
29	3.45	0.64	0.79	1.23	.....	.....	.....	.....	.....	.....	3.00
Means	.....	0.75	0.87	1.05	1.22	.....	1.15	0.86	0.76	0.72	.....
Departures	.....	−0.01	+0.02	+0.04	+0.03	.....	−0.02	−0.09	−0.06	−0.01	.....
Madison, Wis.											
November 14	5.17	.....	.....	.....	.....	.....	.....	1.18	.....	.....	4.57
16	3.45	0.75	0.96	1.15	1.30	.....	.....	1.06	.....	.....	4.57
23	4.37	1.00	1.11	1.26	1.35	.....	.....	1.24	.....	.....	3.15
Means	.....	(0.88)	(1.04)	(1.20)	(1.32)	.....	.....	1.16	.....	.....	.....
Departures	.....	+0.01	+0.03	+0.04	+0.02	.....	.....	−0.01	.....	.....	.....
Lincoln, Nebr.											
November 2	5.56	0.76	0.87	1.16	.....	.....	.....	.....	.....	.....	7.04
7	3.45	.....	1.07	1.22	1.43	1.69	1.42	.....	.....	.....	3.30
14	3.15	.....	0.96	1.07	.....	.....	1.28	1.08	0.91	.....	3.15
15	3.63	.....	1.13	1.25	1.40	.....	1.35	1.19	1.05	0.93	3.99
16	4.37	.....	0.97	1.15	1.38	1.64	1.33	1.18	1.06	1.00	5.56
22	3.30	.....	.....	1.09	1.30	.....	1.29	1.16	1.03	0.93	3.81
23	4.37	0.93	1.07	1.22	1.39	1.59	.....	1.28	.....	1.04	4.57
24	2.62	.....	1.24	1.31	.....	.....	.....	1.25	1.13	.....	2.06
28	3.45	.....	1.10	1.25	1.33	.....	.....	.....	.....	.....	4.37
Means	.....	(0.84)	1.05	1.19	1.37	.....	1.33	1.19	1.04	0.98	.....
Departures	.....	−0.12	−0.01	−0.02	+0.01	.....	−0.05	−0.01	−0.01	+0.04	.....

*Extrapolated.

TABLE 2.—*Solar and sky radiation received on a horizontal surface.*

Week beginning.	Average daily radiation.			Average daily departure for the week.			Excess or deficiency since first of year.		
	Washington.	Madison.	Lincoln.	Washington.	Madison.	Lincoln.	Washington.	Madison.	Lincoln.
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Nov. 5	205	106	170	−26	−62	−56	−3,743	−1,576	.....
12	216	118	191	+9	−32	−22	−3,680	−1,802	.....
19	214	131	256	+28	−5	+55	−3,485	−1,839	.....
26	148	131	230	−23	+4	+43	−3,644	−1,811	.....